MINIMUM SPECIFICATIONS FOR SPIROMETRY EQUIPMENT IN THE OCCUPATIONAL HEALTH PROGRAM

(SPIROMETER AND MICROPROCESSOR/COMPUTER SYSTEMS)

1. 1. Spirometer must meet or exceed the OSHA requirements for spirometers as specified in the current ATS and Cotton Dust standards.

2. It must be a dry rolling seal, positive displacement spirometer suitable for shipboard use. (Strong durable case with volume collection mechanisms enclosed and graph tracing easily visible. Spirometer must be portable and compact.)

3. It must have a direct recording continuous tracing spirograms to enable tests of greater than 15 seconds duration at 20mm/second.

4. It must be a volume spirometer with a capacity of at least 8 liters BTPS (not ATPS).

5. Spirogram obtained from direct drive tracing must be suitable for permanent health record entry and not be degraded by other entries. (No pressure sensitive, carbon paper or chemical paper in the health record.)

6. Stylus must start at zero volume and produce accurate ATPS tracings for manual calculations.

7. The microprocessor/computer must have a digital sensor compatible with the volume displacement spirometer.

8. It must be capable of manual start and stop independent of patient, without aborting the pulmonary function test (The computer/microprocessor/computer must not be flow or volume triggered).

9. The microprocessor/computer must not inhibit the spirometer from providing a simultaneous tracing independently of the electronics of the microprocessor/ computer.

10. The microprocessor/computer must be capable of accepting patient identification data (i.e. age, race, height, sex, date and temperature) via a keyboard. The microprocessor/computer must also print out the patient data in addition to the pulmonary function tests results at the conclusion of the a test judged valid by the microprocessor/computer.

11. The microprocessor/computer must provide instructions to the technicians on procedures to follow for each patient in order to ascertain the validity of the test being run.

12. The microprocessor/computer must have flow and volume signals.

13. It is to contain an automatic temperature sensor with calculations in accordance with NIOSH/OSHA standard for conversion from ATPS to BTPS.

14. Microprocessor/computer printout must be suitable for health treatment record entry.

15. All computerized calculations must be in accordance wit NIOSH/OSHA standard. Knudson Predicted values (1976) are to be used.

16. Graph tracing of spirometer and microprocessor/computer must be able to be initiated using only one switching device.